4.9 NOISE

This EIR section evaluates the potential effects of noise and groundborne vibration associated with construction and operational activities that could occur as a result of implementation of the proposed Specific Plan.

The Initial Study/Notice of Preparation (IS/NOP [Appendix A]) identified the potential for impacts associated with the following: exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance; exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; and a substantial temporary and/or permanent increase in ambient noise levels in the project vicinity. Issues scoped out from further analysis in the EIR include proximity to or association with an airport land use plan or airstrip, as the project site is not located within an airport land use plan or affected area near an airstrip. Data used to prepare this report were taken from the Traffic Study prepared by Austin-Foust Associates (Appendix F1 [Traffic Study]) for the proposed project, and information obtained by measuring and modeling existing and future noise levels at the project site and in the surrounding area (Appendix E [Noise Data]). Full bibliographic entries for all reference materials are provided in Section 4.9.5 (References) at the end of this section.

All comments received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project were taken into consideration during preparation of this EIR, and if relevant, have been addressed in this section or others within this document.

4.9.1 Environmental Setting

Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound because of its potential to disrupt sleep, to interfere with speech communication, and to damage hearing. A typical noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 4.9-1 (Representative Environmental Noise Levels) lists representative noise levels for the environment.

Table 4.9-1 Representative Environmental Noise Levels		
Common Outdoor Activities	*Noise Level (dBA)*	*Common Indoor Activities*
	—110—	Rock Band
Jet Fly-over at 100 feet		
	—100—	
Gas Lawnmower at 3 feet		
	—90—	
		Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime		
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area		Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
		Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime		
	—30—	Library
Quiet Rural Area during Nighttime		Bedroom at Night, Concert Hall (background)
	—20—	
		Broadcast/Recording Studio
	—10—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

SOURCE: California Department of Transportation 1998

Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- L_{eq}, the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- L_{dn}, the Day-Night Average Level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the nighttime.

The logarithmic effect of these additions is that a 60 dBA 24 hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.

- *CNEL*, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24 hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
- L_{min}, the minimum instantaneous noise level experienced during a given period of time.
- L_{max}, the maximum instantaneous noise level experienced during a given period of time.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that can provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA).

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather and reflecting or shielding, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., where the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., where the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Existing Environmental Noise Levels

According to the Noise Element of the City of Huntington Beach General Plan, the primary source of noise within the City is noise from motor vehicles on roadways (traffic noise). These motor vehicles include automobiles, buses, trucks, and vehicles associated with construction equipment transport. Secondary noise sources in the City include aircraft operations, railroad operations, construction activities, and petroleum extraction activities.

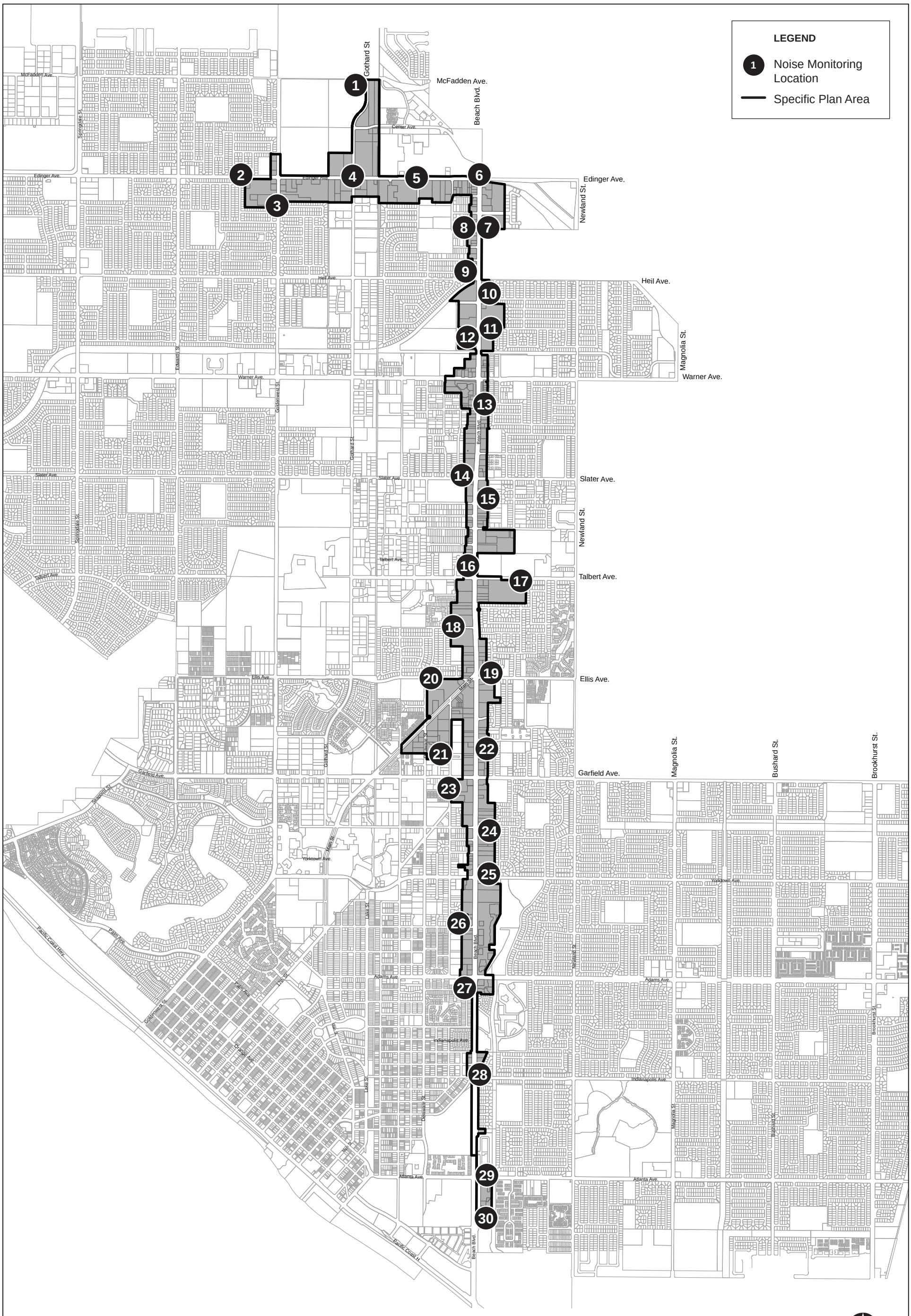
Existing daytime noise levels were monitored at 30 locations in the project area, which are depicted in Figure 4.9-1 (Noise Monitoring Locations), in order to identify representative noise levels at various areas. The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 4.9-2 (Existing Noise Levels in and around the Specific Plan Area). These daytime noise levels are characteristic of a typical urban area.

Existing roadway noise levels were calculated for roadway segments in the project site vicinity that are proximate to existing or future noise-sensitive uses and would receive a moderate to large share of the project trips. This task was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the project traffic analysis. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 4.9-3 (Existing Roadway Noise Levels Off Site).

Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. As such, the range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.



***Source*:** City of Huntington Beach, 2008; PBS&J, 2009.

FIGURE **4.9-1**

Noise Monitoring Locations

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Beach-Edinger Corridors Specific Plan EIR

Table 4.9-2 Existing Noise Levels In and Around the Specific Plan Area

	Location	Primary Noise Sources	Noise Level Statistics		
			L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	15492 Vermont St	Traffic Noise	66.1	51.7	76.5
2	6832 Edinger Ave	Traffic on Edinger	59.3	45.2	74.0
3	16105 Golden West	Traffic on Golden West	68.0	50.0	81.3
4	7362 Edinger Ave	Traffic	72.8	58.4	87.1
5	7664 Edinger Ave	Light traffic on Sher Lane	58.0	45.2	80.6
6	16001 Beach Blvd	Traffic	68.9	59.5	79.6
7	16152 Beach Blvd	Parking lot traffic	56.2	50.2	71.9
8	7942 Stark Street	Traffic on Stark	62.5	46.4	78.5
9	7952 Alhambra Ave	Traffic	56.9	47.5	67.1
10	16572 Beach Blvd	Traffic	56.7	50.0	69.9
11	16741 Leafwood Cir	Traffic	59.1	49.1	70.7
12	16773 Beach Blvd	Traffic on Beach	69.7	52.7	85.6
13	17122 Beach Blvd	Traffic on Beach	58.0	49.5	65.0
14	17445 Beach Blvd	Traffic on Beach (shielded by shopping center uses)	53.8	49.3	68.8
15	17612 Beach Blvd	Traffic on Cameron Street	55.3	63.7	71.6
16	17931 Beach Blvd	Traffic on Beach	56.6	47.4	68.7
17	8230 Talbert Ave	Parking lot traffic	55.1	48.8	73.5
18	7841 Taylor	Light traffic on Taylor	56.9	41.7	73.2
19	8069 Ellis Ave	Traffic on Ellis/Traffic on Beach	66.7	49.8	82.4
20	7771 Ellis Ave	Traffic on Ellis, barking dog	61.0	43.8	75.4
21	18900 Delaware St	Traffic on Delaware, mobile blood lab generator	61.9	47.6	75.8
22	8072 Constantine Dr	Traffic on Beach, minor road work	63.1	47.0	85.4
23	7922 Nomad Cir	Traffic on Garfield, parking lot noise	62.4	47.9	76.2
24	19142 Beach Blvd	Traffic on Beach/roadwork on Garfield	71.9	54.2	82.3
25	8075 Yorktown Ave	Traffic on Yorktown, commercial HVAC	67.1	58.2	75.7
26	729 Utica Ave	Traffic on Utica, tire shop noise	60.2	48.7	80.1
27	20001 Beach Blvd	Traffic on Beach	74.2	55.0	92.3
28	Indianapolis Ave	Traffic on Beach	67.7	47.3	77.9
29	7478 Atlantic Ave	Traffic on Atlantic	69.3	51.4	79.6
30	2168 Beach Boulevard	Traffic on Beach/leaf blower	69.0	50.5	81.7

SOURCE: PBS&J 2008

Table 4.9-3 Existing Roadway Noise Levels Off Site		
Roadway	*Roadway Segment*	*dBA L_{dn}*
Beach Boulevard	Hazard Ave and Bolsa Ave	71.4
	Bolsa Ave and McFadden Ave	71.8
	McFadden Ave and I-405	72.5
	I-405 and Edinger Ave	71.8
	Edinger Ave and Heil Ave	71.4
	Heil Ave and Warner Ave	71.3
	Warner Ave and Slater Ave	71.1
	Slater Ave and Talbert Ave	71.1
	Talbert Ave and Ellis Ave	70.5
	Ellis Ave and Garfield Ave	70.6
	Garfield Ave and Yorktown Ave	70.7
	Yorktown Ave and Adams Ave	69.0
	Adams Ave and Indianapolis Ave	67.6
	Indianapolis Ave and Atlanta Ave	66.9
McFadden Avenue	Gothard St and Beach Blvd	65.5
Edinger Avenue	Goldenwest St and Gothard St	69.0
	Gothard St and Beach Blvd	69.1
Warner Avenue	Gothard St and Beach Blvd	70.3
	Beach Blvd and Newland St	70.2
	Newland St and Magnolia St	70.3
Ellis Avenue	Beach Blvd and Newland St	65.1
	Newland St and Magnolia St	64.6
Garfield Avenue	Beach Blvd and Newland St	64.9
Adams Avenue	Talbert Ave and Ellis Ave	68.5
Talbert Avenue	Beach Blvd and Newland St	65.1

SOURCE: PBS&J 2009 (calculation data and results are provided in Appendix E)

The general human response to different levels of groundborne vibration velocity levels is described in Table 4.9-4 (Human Response to Different Levels of Groundborne Vibration).

Table 4.9-4 Human Response to Different Levels of Groundborne Vibration	
Vibration Velocity Level	*Human Reaction*
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

SOURCE: HMMH 2006

Existing Groundborne Vibration Levels

Aside from seismic events, the greatest source of groundborne vibration in the project area is roadway truck and bus traffic. Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB. These levels could reach 72 VdB where trucks and buses pass over bumps in the road.

4.9.2 Regulatory Framework

Federal

There are no federal regulations related to noise that apply to the proposed project.

State

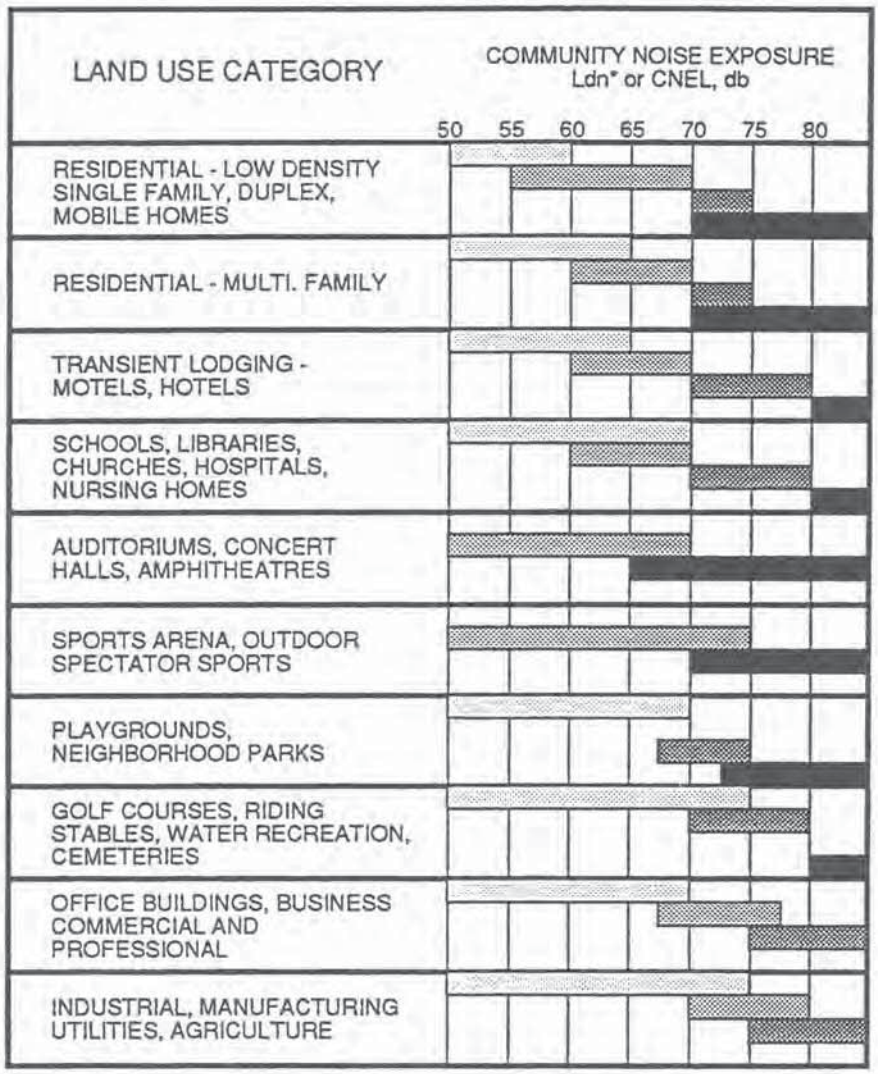
State Department of Health Services

The State Office of Noise Control in the State Department of Health Services has established guidelines to provide a community with a noise environment that it deems to be generally acceptable. Specifically, ranges of noise exposure levels have been developed for different land uses to serve as the primary tool a city uses to assess the compatibility between land uses and outdoor noise. These noise standards are shown in Figure 4.9-2 (Land Use Compatibility with Community Noise Environments). As shown in Figure 4.9-2, a noise level standard of 60 dBA L_{dn} is used for the exterior living areas of new residential land uses, and 45 dBA L_{dn} for the interior of all new residential uses. Where a land use is denoted as "normally acceptable" for the given L_{dn} noise environment, the highest noise level in that range should be considered the maximum desirable for conventional construction that does not incorporate any special acoustic treatment. The acceptability of noise environments classified as "conditionally acceptable" or "normally unacceptable" will depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in the structure's design.

Local

City of Huntington Beach General Plan

The California Government Code requires that a noise element be included in the General Plan of each county and city in the state. Each local government's goals, objectives, and policies for noise control are established by the noise element of the General Plan and the passage of specific noise ordinances. The Noise Element of the City of Huntington Beach General Plan addresses the issue of noise by identifying sources of noise in the City and providing objectives and policies that ensure that noise from various sources do not create an unacceptable noise environment.



***Source*:** Office of Noise Control, California Department of Health.

FIGURE **4.9-2**

Land Use Compatibility with Community Noise Environments

According to the Noise Element of the City of Huntington Beach General Plan, the noise level standards adopted by the City are more stringent than the State Office of Noise Control guidelines for residential and commercial noise levels. In addition, the City's Noise Ordinance, as discussed below, places limitations on noise produced by equipment operation, human activities, and construction. The Noise Element goals, objectives, and policies that are relevant to the proposed project are identified below.

Goal N 1 Ensure that all necessary and appropriate actions are taken to protect Huntington Beach residents, employees, visitors, and noise sensitive uses from the adverse impacts created by excessive noise levels from stationary and ambient sources.

Objective N 1.2 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise sensitive uses of Huntington Beach.

Policy N 1.2.1 Require, in areas where noise levels exceed an exterior L_{dn} of 60 dB(A) and an interior L_{dn} of 45 dB(A), that all new development of "noise sensitive" land uses, such as housing, health care facilities, schools, libraries, and religious facilities, include appropriate buffering and/or construction mitigation measures that will reduce noise exposure to levels within acceptable limits.

Policy N 1.2.3 Require development, in all areas where the ambient noise level exceeds an L_{dn} of 60 dB(A), to conduct an acoustical analysis and incorporate special design measures in their construction, thereby, reducing interior noise levels to the 45 dB(A) L_{dn} level.

Policy N 1.2.5 Require development that generates increased traffic and subsequent increases in the ambient noise levels adjacent to noise sensitive land uses to provide for appropriate mitigation measures in accordance with the acceptable limits of the City noise ordinance.

Objective N 1.3 Minimize the adverse impacts of traffic-generated noise on residential and other "noise sensitive" uses.

Policy N 1.3.7 Provide for the development of alternate transportation modes such as bicycle paths and pedestrian walkways to minimize the number of noise generating automobile trips.

Policy N 1.3.10 Require that mechanical equipment, such as air conditioning units or pool equipment, comply with the City's Noise Ordinance and Zoning and Subdivision Ordinance.

Objective N 1.4 Minimize noise spillover or encroachment from commercial and industrial land uses into adjoining residential neighborhoods or "noise-sensitive" uses

Policy N 1.4.2 Require that the loading and shipping facilities of commercial and industrial land uses abutting residential parcels to be located and designed to minimize the potential noise impacts upon residential parcels.

Policy N 1.4.3 Require that the parking areas of all commercial and industrial land uses, which abut residential areas, to be buffered and shielded by walls, fences, or adequate landscaping.

Policy N 1.4.4 Require that the parking structures of commercial or industrial land uses be designed to minimize the potential noise impacts of vehicles on the site as well as on adjacent land uses

Objective N 1.5 Minimize the potentially adverse noise impacts associated with the development of mixed-use structures where residential units are located above or adjacent to commercial uses.

Objective N 1.6 Minimize the impacts of construction noise on adjacent uses

Policy N 1.6.1 Ensure that construction activities be regulated to establish hours of operation, to prevent and/or mitigate the generation of excessive or adverse noise impacts through the implementation of the existing Noise Ordinance and/or any future revisions to the Noise Ordinance.

Objective N 1.7 Ensure that buildings are constructed to prevent adverse noise transmission between differing uses or tenants located in the same commercial structure and individual dwelling units in multi-family residential structures.

Policy N 1.7.1 Rigorously enforce the applicable provisions of the Uniform Building Code

and City of Huntington Beach Municipal Code which prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures.

Consistency Analysis

This EIR provides the acoustical analysis necessary to define noise levels on site. The analysis includes City requirements and mitigation measures to ensure that noise levels in the exterior activity environments meet City standards, including limiting the hours of construction in accordance with the Huntington Beach Municipal Code.

In addition, with respect to Policy N 1.2.1, the term "acceptable limits" has not been clearly defined. However, as discussed below under the City of Huntington Beach Municipal Code, the City standard for exterior noise levels is 55 dBA in residential areas and 60 dBA in commercial areas. In residential communities where the existing noise exposure is 55 dBA L_{dn} or lower, the Environmental Protection Agency (EPA) and others find that at least a 3 dBA increase in the L_{dn} would have to occur before a significant increase in community dissatisfaction would be noted. Thus, there would be no significant difference in dissatisfaction (as measured by the percent of people reporting themselves "highly annoyed" when surveyed) for residential exposures of 55 dBA L_{dn} versus 58 dBA L_{dn}. In commercial zones where the City standard for exterior noise is 60 dBA, at least 63 dBA would have to occur before a significant increase is noted.

As demonstrated below, the proposed project would generate increased local traffic volumes in the near term but actually reduce net long-term trips as a result of the incorporation of mixed uses, pedestrian walkways, and connections to nearby transit. Further, as discussed in Impact 4.9-5 below, the proposed project would not increase local ambient noise levels by more than 0.3 dBA under near-term conditions when compared to anticipated noise levels without the proposed project. With respect to long-term conditions, because the proposed project would generate fewer future vehicle trips than would the current General Plan designations for the Specific Plan Area, noise levels would actually decrease under long-term conditions compared to long-term conditions without the project. Therefore, the proposed project would not conflict with these applicable policies.

City of Huntington Beach Municipal Code

The City of Huntington Beach has also adopted a Noise Ordinance (Chapter 8.40 of the Huntington Beach Municipal Code), which identifies exterior and interior noise standards, specific noise restrictions, exemptions, and variances for sources of noise within the City. The noise level standards that have been adopted by the City are more stringent than State Office of Noise Control guidelines for residential and commercial noise levels. The Noise Ordinance applies to all noise sources with the exception of any vehicle that is operated upon any public highway, street or right-of-way, or to the operation of any off-

highway vehicle, to the extent that it is regulated in the State Vehicle Code, and all other sources of noise that are specifically exempted.

The exterior noise standards established in the City's Noise Ordinance are identified in Table 4.9-5 (City of Huntington Beach Noise Ordinance Exterior Noise Standards), along with the exterior noise levels that are prohibited. Table 4.9-6 (City of Huntington Beach Noise Ordinance Interior Noise Standards) identifies the City's interior noise standards and prohibited interior noise levels. In both cases, if the ambient noise level is greater than the identified noise standards, the noise standard becomes the ambient noise level without the offending noise.

Table 4.9-5 City of Huntington Beach Noise Ordinance Exterior Noise Standards

Noise Zone	*Noise Zone Land Uses*	*Noise Level*	*Time Period*
1	All Residential Properties	55 dBA 50 dBA	7:00 A.M. to 10:00 P.M. 10:00 P.M. to 7:00 A.M.
2	All Professional Office and Public Institutional Properties	55 dBA	Anytime
3	All Commercial Properties Except Professional Office	60 dBA	Anytime
4	All Industrial Properties	70 dBA	Anytime

SOURCE: City of Huntington Beach Noise Ordinance

Exterior Noise Levels Prohibited:

It shall be unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured on any residential, public institutional, professional, commercial or industrial property, either within or without the City, to exceed the applicable noise standards:

(a) For a cumulative period or more than thirty (30) minutes in any hour;

(b) Plus 5 dBA for a cumulative period of more than fifteen (15) minutes in any hour;

(c) Plus 10 dBA for a cumulative period of more than five (5) minutes in any hour;

(d) Plus 15 dBA for a cumulative period of more than one (1) minute in any hour; or

(e) Plus 20 dBA for any period of time.

In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Table 4.9-6 City of Huntington Beach Noise Ordinance Interior Noise Standards

Noise Zone	*Noise Zone Land Uses*	*Noise Level*	*Time Period*
1	All Residential Properties	55 dBA 45 dBA	7:00 A.M. to 10:00 P.M. 10:00 P.M. to 7:00 A.M.
2, 3, 4	All Professional Office, Public Institutional, Commercial, and Industrial Properties	55 dBA	Anytime

SOURCE: City of Huntington Beach Noise Ordinance

Interior Noise Levels Prohibited:

It shall be unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured within any other structure on any residential, public institutional, professional, commercial or industrial property to exceed:

(a) The noise standard for a cumulative period or more than five (5) minutes in any hour;

(b) The noise standard plus 5 dBA for a cumulative period of more than one (1) minutes in any hour; or

(c) The noise standard plus 10 dBA for any period of time.

In the event the ambient noise level exceeds any of the first two noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

According to the EPA, a difference of 3 dBA L_{dn} is a barely perceptible increase to most people when evaluating changes in 24-hour community noise levels. Consequently, in the case of residential and commercial properties such as those included in the proposed mixed-use project, where the existing noise exposure is 55 dBA L_{dn} or lower for residential properties and 60 dBA L_{dn} or lower for commercial properties, the maximum exterior noise level allowable on the project site is 58 dBA L_{dn} and 63 dBA $L_{dn,}$ respectively.

Construction noise activities are exempt from the Noise Ordinance, provided that the project developer has been granted a permit from the City and that the construction activities do not occur between the hours of 8:00 P.M. and 7:00 A.M. on weekdays and Saturdays, or at any time on Sundays or federal holidays.

4.9.3 Project Impacts and Mitigation

Analytic Method

This analysis of the existing and future noise environments is based on noise-level monitoring, noise-prediction modeling, and empirical observations. As defined in the City's General Plan Noise Element, noise-sensitive land uses include public schools, hospitals, and institutional uses, including churches, museums, and private schools. Typically, residential uses are also considered noise-sensitive receptors. Therefore, for the purposes of this analysis, the nearest existing sensitive receptors to the project site would be the residential uses located within 50 feet of the Specific Plan area.

Existing noise levels were monitored at selected locations within the project area using a Larson-Davis Model 814 precision sound-level meter, which is consistent with the standards of the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Noise modeling procedures involved the calculation of existing and future vehicular noise levels along individual roadway segments in the project area. This task was accomplished using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA RD 77 108). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. Traffic volumes utilized as data inputs in the noise prediction model were provided by the Traffic Impact Analysis prepared by Austin-Foust Associates for the proposed project. The analysis considers future cumulative traffic noise levels, in recognition of expected higher traffic volumes and resultant noise levels in the future, which provide an appropriate benchmark against which future noise resulting from implementation of the Specific Plan can be assessed.

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2009 CEQA Guidelines, the Huntington Beach General Plan, and the Huntington Beach Municipal Code. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on noise if it would:

- Expose persons to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies

- Expose nearby sensitive uses to excessive groundborne vibration levels or noise levels
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels
- Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels

Human Exposure to Noise

The CEQA Guidelines do not define the levels at which temporary and permanent increases in ambient noise are considered "substantial." As discussed previously in this section, a noise level increase of 3 dBA is barely perceptible to most people, a 5 dBA increase is readily noticeable, and a difference of 10 dBA would be perceived as a doubling of loudness. Based on the noise measurements shown in Table 4.9-2, the ambient noise in the vicinity of the project area currently ranges from 60.8 dBA to 68.4 dBA L_{eq}. Therefore, for the purposes of this EIR, an increase of 3 dBA in ambient noise levels would be considered a significant impact.

Additionally, noise generated by construction activities is regulated by the City of Huntington Beach Municipal Code. Construction activities that would occur outside the designated hours established by Section 8.40.090(d) would be potentially significant. Similarly, operational noise resulting from heating ventilation and cooling systems (HVAC), deliveries, and refuse collection are also regulated by the City's Municipal Code, and noise generated by these activities that exceeds the City's established standards would be potentially significant.

The CEQA Guidelines also do not define the levels at which groundborne vibration or groundborne noise is considered "excessive." For the purpose of this analysis, groundborne vibration impacts associated with human annoyance would be significant if vibration caused by implementation of the proposed project exceeds 85 VdB, which is the vibration level that is considered by the Federal Transit Administration (FTA) to be acceptable only if there are an infrequent number of events per day (as described in Table 4.9-5). In terms of groundborne vibration impacts on structures, this analysis will use the Federal Transit Administration's vibration damage threshold of approximately 100 VdB for fragile buildings and approximately 95 VdB for extremely fragile historic buildings (HMMH 2006).

Effects Not Found to Be Significant

Threshold	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The project site is not located within 2 miles of a public airport, public use airport, or private airstrip. Therefore, the project would not expose people to excessive noise from airports. No impact would occur, and no further analysis of this issue is required in the EIR.

Impacts and Mitigation

Threshold	Would the project result in the exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact 4.9-1 **Implementation of the proposed project could generate noise levels in excess of standards established by the City. However, with implementation of mitigation measures, this impact is considered *less than significant*.**

Construction

The proposed project has the potential to result in events that may exceed permitted noise levels. The primary sources of noise associated with the proposed project would be construction activities and project-related traffic volumes. Secondary sources include increased human activity throughout the sites. Noise limits for sensitive uses established in the Huntington Beach Municipal Code are shown in Table 4.9-5 and Table 4.9-6. Development of projects as part of the Specific Plan would require the use of heavy equipment for demolition, site excavation, installation of utilities, site grading, paving, and building fabrication. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise-generating characteristics of specific types of construction equipment and typical construction activities. These data are presented in Table 4.9-7 (Noise Ranges of Typical Construction Equipment) and Table 4.9-8 (Typical Outdoor Construction Noise Levels). These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

Table 4.9-7 Noise Ranges of Typical Construction Equipment

Equipment	*Noise Levels in dBA L_{eq} at 50 Feet* [a]
Front Loader	73 to 86
Trucks	82 to 95
Cranes (moveable)	75 to 88
Cranes (derrick)	86 to 89
Vibrator	68 to 82
Saws	72 to 82
Pneumatic Impact Equipment	83 to 88
Jackhammers	81 to 98
Pumps	68 to 72
Generators	71 to 83
Compressors	75 to 87
Concrete Mixers	75 to 88
Concrete Pumps	81 to 85
Back Hoe	73 to 95
Pile Driving (peaks)	95 to 107
Tractor	77 to 98
Scraper/Grader	80 to 93
Paver	85 to 88

SOURCE: U.S. EPA 1971

a. Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.

Table 4.9-8 Typical Outdoor Construction Noise Levels

Construction Phase	*Noise Levels at 50 Feet (dBA L_{eq})*	*Noise Levels at 50 Feet with Mufflers (dBA L_{eq})*
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

SOURCE: U.S. EPA 1971

Noise that would be experienced by sensitive uses due to development associated with implementation of the proposed project is determined at their property lines. While the nearest sensitive uses vary at different locations in and around the Specific Plan area, and as specific development plans have not yet been determined at individual sites, for the purpose of this analysis it is assumed that sensitive receptors could be as close as 50 feet from where construction would take place. Sensitive receptors in the project vicinity could experience noise levels up to 86 dBA L_{eq} as a result of construction activities, or as high as 107 dBA L_{eq} in the event that pile drivers are used. Under Section 8.40.090(d) (Special Provisions) of

Chapter 8.40 of the City's Municipal Code, noise sources associated with construction are exempt from the requirements of the Municipal Code, provided that the project developer has acquired the proper permit(s) from the City and construction activities do not occur between the hours of 8:00 P.M. and 7:00 A.M. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. As construction would not occur except during the times permitted in the Noise Ordinance, and as Section 8.40.090(d) of the Municipal Code allows construction noise in excess of standards to occur between these hours, the proposed project would not violate established standards.

The following mitigation measures shall be implemented as part of the proposed project:

MM4.9-1 *Project applicants shall require by contract specifications that the following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels:*

- *Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 300 feet of a project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period*
- *Ensure that construction equipment is properly muffled according to industry standards and be in good working condition*
- *Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible*
- *Schedule high noise-producing activities between the hours of 8:00 A.M. and 5:00 P.M. to minimize disruption on sensitive uses, Monday through Saturday. Schedule pile-driving activities between the hours of 8:00 A.M. and 4:00 P.M. on Mondays through Fridays only.*
- *Implement noise attenuation measures, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources*
- *Use electric air compressors and similar power tools rather than diesel equipment, where feasible*
- *Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 10 minutes*
- *Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.*

Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

MM4.9-2 *Project applicants shall require by contract specifications that construction staging areas along with the operation of earthmoving equipment within the project area would be located as far away from vibration and noise sensitive sites as possible. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.*

MM4.9-3 *Project applicants shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets. Contract specifications shall be included in the proposed project construction documents, which shall be reviewed by the City prior to issuance of a grading permit.*

Implementation of mitigation measures MM4.9-1 through MM4.9-3 would ensure that impacts associated with construction-related noise would be minimized. Therefore, this impact would be ***less than significant***.

Operation

Sources of noise generated by implementation of the proposed project would include new stationary sources (such as rooftop heating, ventilation, and air conditioning [HVAC] systems for the residential and commercial uses). Large-scale HVAC systems would be installed for the new residential and commercial buildings in the Specific Plan area. Large HVAC systems associated with the residential commercial buildings could result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. It is assumed that HVAC units would be mounted on the rooftops of the proposed buildings. In addition, the installation of shielding around these HVAC systems would be required as part of the proposed project, as stated in mitigation measure MM4.9-4 below.

MM4.9-4 *Project applicants shall provide proper shielding for all new HVAC systems used by the proposed residential and mixed-use buildings to achieve a noise attenuation of 15 dBA at 50 feet from the equipment.*

The shielding installed around these systems would typically reduce noise levels by approximately 15 dBA, which could reduce HVAC system noise to approximately 50 dBA L_{eq} at 50 feet from the equipment. Implementation of mitigation measure MM4.9-4 would ensure that impacts related to the HVAC systems would remain below the exterior noise standard established in the City's Noise Element and Municipal Code.

The proposed project would also introduce new activity and noise to the area as residences are included and people are attracted to the new mix of uses that would develop as part of the proposed project. As shown in Table 4.9-2 (Existing Noise Levels In and Around the Specific Plan Area), noise monitoring in the project area indicates that existing noise levels at various points in the Specific Plan area currently exceed the City noise standards for residential uses, especially along Beach Boulevard. Development of new residences in areas where existing noise levels currently exceed the City standard would constitute a significant impact. The City of Huntington Beach General Plan states that sensitive uses (such as residences) should incorporate sound-reducing measures, including fences, walls, etc., when constructed in areas exposed to greater than existing standards. As such, the following mitigation measure shall be implemented for all residential development within the Specific Plan Area where the existing noise levels exceed the City standards as set forth in Section 8.40.070 and Section 8.40.080 of the Municipal Code.

MM4.9-5 *Prior to issuance of building permits, project applicants shall submit an acoustical study for each development, prepared by a certified acoustical engineer. Should the results of the acoustical study indicate that that exterior (e.g., patios and balconies) and interior noise levels would exceed the*

standards set forth in the City of Huntington Beach Municipal Code Sections 8.40.050 through 8.40.070, the project applicant shall include design measures that may include acoustical paneling or walls to ensure that noise levels do not exceed City standards. Final project design shall incorporate special design measures in the construction of the residential units, if necessary.

With implementation of mitigation measure MM4.9-4, development within the Specific Plan area would be required to shield HVAC systems such that noise attributed to such systems would not increase noise levels above City standards. In addition, implementation of mitigation measure MM4.9-5 would ensure that exterior living spaces, such as porches and patios are constructed in a manner that noise levels do not exceed the City noise standards. Therefore, this impact would be reduced to a level of ***less than significant***. It should be noted that the evaluation of roadway noise, as it relates to the Specific Plan, is evaluated in Impact 4.9-4.

Threshold	Would the project result in the exposure of nearby sensitive uses to excessive groundborne vibration levels or noise levels?

Impact 4.9-2 **Implementation of the proposed project could generate or expose persons or structures to excessive groundborne vibration. Even with implementation of mitigation measures, construction impacts are considered *significant and unavoidable*.**

Construction

Construction-related groundborne noise and vibration has two potential impacts. First, groundborne noise and vibration at high enough levels can result in human annoyance. Second, groundborne vibration can potentially damage the foundations and exteriors of historic structures. Groundborne vibration that can cause this kind of damage is typically limited to impact equipment, especially pile-drivers. Construction activities that would occur under the proposed project have the potential to generate low levels of groundborne vibration. Table 4.9-9 (Vibration Source Levels for Construction Equipment) identifies various vibration velocity levels for the types of construction equipment that would operate within the City during construction.

Table 4.9-9 Vibration Source Levels for Construction Equipment

	Approximate VdB			
Equipment	*25 Feet*	*50 Feet*	*75 Feet*	*100 Feet*
Pile Driver (Impact)	112	106	102	100
Large Bulldozer	87	81	77	75
Loaded Trucks	86	80	76	74
Jackhammer	79	73	69	67
Small Bulldozer	58	52	48	46

SOURCE: Federal Railroad Administration 1998

In addition to the construction equipment shown in Table 4.9-9, vibration that would be experienced from the use of impact pile drivers could reach as high as 112 VdB at a distance of 25 feet (HMMH

1995). Like noise, groundborne noise and vibration will attenuate at a rate of approximately 6 VdB per doubling of distance. The groundborne noise and vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences, schools, and hospitals) that are located adjacent to, or within, the vicinity of specific projects. These sensitive uses could sometimes be located as close as 25 feet to the construction site or as far as several hundred feet away. Based on the information presented in Table 4.9-9, vibration levels (excluding pile-driving) could reach up to 87 VdB at sensitive uses located within 25 feet of construction. For sensitive uses that are located at or within 25 feet of project construction sites, sensitive receptors (e.g., residents, school children, and hospital patients) at these locations may experience groundborne noise and vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. So long as construction occurs more than 50 feet from sensitive receptors, the impact associated with groundborne noise and vibration generated by the equipment would be below 85 VdB and thus would be less than significant. However, as specific site plans or constructions schedules are unknown at this time, it may be possible that construction activities could occur as close as 25 feet from sensitive receptors. This would result in these sensitive receptors experiencing groundborne noise and vibration impacts above the threshold of 85 VdB, in which case this impact would be potentially significant. Implementation of mitigation measures MM4.9-1 through MM4.9-3 would help to reduce this impact, but not to a less-than-significant level because certain construction activities may still be required in proximity to nearby sensitive receptors; therefore, this impact would remain ***significant and unavoidable***.

Operation

During operation of the proposed project, background operational vibration levels would be expected to average around 50 VdB, as discussed previously in this section. This is substantially less than the 85 VdB threshold for people in the vicinity of the project site. Groundborne vibration resulting from operation of the proposed project would primarily be generated by trucks making periodic deliveries to the uses within the Specific Plan boundaries. However, these types of deliveries would be consistent with deliveries that are currently made along roadways to commercial uses in the proposed Specific Plan and in the proposed project vicinity and are not anticipated to increase groundborne vibration above existing levels because the proposed project would increase the level of uses (residential) that do not typically require this type of delivery and decrease the level of uses (office and commercial) that do. Because no substantial sources of groundborne vibration would be built as part of the proposed project, no vibration impacts would occur during operation of the proposed project. Therefore, operation of the proposed project would not expose sensitive receptors on or off site to excessive groundborne vibration or groundborne noise levels, and this impact would be ***less than significant***.

Threshold	Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.9-3 **Implementation of the proposed project would result in a substantial temporary or periodic increase in ambient noise levels during construction activities but not during project operation. However, with implementation of mitigation measures, these impacts are considered *less than significant*.**

Construction

As discussed in Impact 4.9-1, construction activities associated with the proposed project could reach above 86 dBA L_{eq} within 50 feet of the proposed project site. These construction activities would represent a substantial temporary or periodic increase in ambient noise levels. As discussed previously under "Thresholds of Significance," this analysis assumes that an increase of 3.0 dBA or greater over ambient noise levels is substantial and significant. As shown in Table 4.9-2, the highest existing daytime ambient noise level monitored in the project vicinity was 74.2 dBA L_{eq} at 2001 Beach Boulevard. As such, the noise generated by construction activities for the proposed project could result in a temporary increase in ambient noise levels of over 3 dBA at uses adjacent to the project site. However, the construction activities would only occur during the permitted hours designated in the *City of Huntington Beach Municipal Code*, and thus would not occur during recognized sleep hours for residences or on days that residents are most sensitive to exterior noise (Sundays and federal holidays). As such, while an increase in ambient noise levels could occur from the construction activities associated with the proposed project, an adverse effect on the nearby residents would not occur because construction noise is not restricted pursuant to the *Municipal Code* as long as it occurs during permitted hours. Implementation of mitigation measures MM4.9-1 through MM4.9-3 would further reduce this impact. Therefore, this impact would be ***less than significant.***

Operation

Operation of the proposed project would not include special events or temporary activities that would cause an increase in ambient noise levels. In addition, operation of the proposed project would not require periodic use of special stationary equipment that would expose off-site sensitive receptors to an increase in ambient noise levels above those existing without the proposed project. Impacts 4.9-1 and 4.9-4 evaluate the potential for mechanical equipment, which would be assumed to be a constant/permanent source of ambient noise levels, attributable to the proposed project to increase ambient noise levels. Therefore, there would be no temporary or periodic noise impacts to on- or off-site receptors due to operation of the proposed project. This impact would be ***less than significant***.

Threshold	Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.9-4 **The proposed project would not cause a substantial permanent increase in ambient noise levels. With implementation of mitigation measures, this impact is considered *less than significant*.**

The increase in traffic resulting from implementation of the proposed project would increase the ambient noise levels at off-site locations in the project vicinity. Table 4.9-10 (Current and Future [2016] Roadway Noise Levels) identifies the changes in future noise levels along the study area roadway segments in the project vicinity. As discussed previously, a difference of 3.0 dBA between 24-hour noise levels is a barely perceptible increase to most people. A 5.0 dBA increase is readily noticeable, and a difference of 10 dBA would be perceived as a doubling of loudness. Existing traffic noise levels are identified in Table 4.9-3. Noise levels associated with traffic generated from existing conditions with the proposed project are

calculated at the selected locations along the study-area roadway segments within the City using traffic data from the traffic study (included in Appendix F1). As stated in the Thresholds of Significance, a 3.0 dBA L_{dn} increase would be considered substantial for the purposes of this analysis.

Table 4.9-10 Current and Future (2016) Roadway Noise Levels

Roadway Segment		Noise Levels in dBA L_{dn}						
		Existing	Year 2016 Without Project Traffic	Year 2016 Increase Without Project	Year 2016 With Project Traffic	Project Related Increase	Significance Threshold[1]	Exceeds Significance Threshold?
Beach Boulevard	Hazard Ave and Bolsa Ave	71.4	71.9	0.2	71.9	0.0	3.0	No
	Bolsa Ave and McFadden Ave	71.8	72.2	0.4	72.2	0.0	3.0	No
	McFadden Ave and I-405	72.5	72.8	0.3	72.8	0.0	3.0	No
	I-405 and Edinger Ave	71.8	72.8	1.0	72.8	0.0	3.0	No
	Edinger Ave and Heil Ave	71.4	72.1	0.7	72.2	0.1	3.0	No
	Heil Ave and Warner Ave	71.3	71.6	0.3	71.6	0.0	3.0	No
	Warner Ave and Slater Ave	71.1	71.4	0.3	71.5	0.1	3.0	No
	Slater Ave and Talbert Ave	71.1	71.1	0.0	71.2	0.1	3.0	No
	Talbert Ave and Ellis Ave	70.5	71.0	0.5	71.1	0.1	3.0	No
	Ellis Ave and Garfield Ave	70.6	71.4	0.8	71.4	0.0	3.0	No
	Garfield Ave and Yorktown Ave	70.7	70.8	0.1	70.8	0.0	3.0	No
	Yorktown Ave and Adams Ave	69.0	70.8	1.8	70.8	0.0	3.0	No
	Adams Ave and Indianapolis Ave	67.6	69.3	1.7	69.3	0.0	3.0	No
	Indianapolis Ave and Atlanta Ave	66.9	68.3	1.4	68.3	0.0	3.0	No
McFadden Avenue	Gothard St and Beach Blvd	65.5	65.9	0.4	66.0	0.1	3.0	No
Edinger Avenue	Goldenwest St and Gothard St	69.0	69.1	0.1	69.2	0.1	3.0	No
	Gothard St and Beach Blvd	69.1	71.1	2.0	71.2	0.1	3.0	No
Warner Avenue	Gothard St and Beach Blvd	70.3	70.4	0.1	70.4	0.0	3.0	No
	Beach Blvd and Newland St	70.2	70.7	0.5	70.7	0.0	3.0	No
	Newland St and Magnolia St	70.3	71.0	0.7	71.0	0.0	3.0	No
Ellis Avenue	Beach Blvd and Newland St	65.1	65.7	0.6	66.0	0.3	3.0	No
	Newland St and Magnolia St	64.6	65.5	0.9	65.6	0.1	3.0	No
Garfield Avenue	Beach Blvd and Newland St	64.9	65.7	0.8	65.7	0.0	3.0	No
Adams Avenue	Talbert Ave and Ellis Ave	68.5	69.9	1.4	69.9	0.0	3.0	No
Talbert Avenue	Beach Blvd and Newland St	65.1	65.6	0.5	65.7	0.1	3.0	No

SOURCE: PBS&J 2009 (calculation data and results are provided in Appendix E)

As shown in Table 4.9-10, no roadways within or around the Specific Plan would be anticipated to exceed the 3.0 dBA L_{dn} increase with implementation of the proposed project.

As identified above, the majority of the study roadway segments would not experience an increase in noise levels due to the proposed project traffic volumes, while the greatest increase between Year 2016 Without Project and Year 2016 with Project roadway generated noise levels would occur on Ellis Avenue between Beach Boulevard and Newland Street. Noise in this area is projected to increase by 0.3 dBA as a result of the proposed project. This increase would be inaudible/imperceptible to most people and would not exceed the identified threshold of significance.

In addition, as stated under Impact 4.9-1, the proposed project would likely include the presence of HVAC systems, which for the purposes of this analysis are assumed to be a permanent source of noise. As stated above, implementation of mitigation measure MM4.9-4 would ensure that impacts related to the HVAC systems would remain below the exterior noise standard established in the City's Noise Element and Municipal Code. Therefore, this impact would be considered ***less than significant***.

4.9.4 Cumulative Impacts

A cumulative impact analysis is only provided for those thresholds that result in a less-than-significant or significant and unavoidable impact. A cumulative impact analysis is not provided for Effects Found Not to Be Significant, which result in no project-related impacts.

The geographic context for the analysis of cumulative noise impacts depends on the impact being analyzed. For construction impacts, only the immediate area around the specific development site would be included in the cumulative context. For operational/roadway related impacts, the context is build-out of the City of Huntington Beach General Plan, including existing and future development of cumulative projects within the City of Huntington Beach, as well as related projects in adjacent communities that would be potentially impacted. This cumulative impact analysis considers development of the proposed project, in conjunction with ambient growth as discussed in Section 4.13 (Transportation/Traffic), and other development within the vicinity of the proposed project in the City of Huntington Beach and surrounding jurisdictions. Noise is by definition a localized phenomenon, and is significantly reduced in magnitude as distance from the source increases. Consequently, only projects and growth due to occur in the project area would be likely to contribute to cumulative noise impacts.

Similar to any urban area where new structures are proposed as part of urban development/redevelopment, increases in noise at sensitive uses would occur as a result of construction of various developments, including those associated with the proposed project. Other construction that may occur in the vicinity of the proposed project site would contribute noise levels similar to those generated for the proposed project. Where this development adjoins the proposed project construction, the combined construction noise levels would have a cumulative effect with respect to increases in ambient noise levels and exceedance of City standards. Noise is not strictly additive, and a doubling of noise sources would not cause a doubling of noise levels; however, cumulative construction noise levels would be in excess of the City standards at nearby sensitive receptors.

As discussed under Impact 4.9-1, Section 8.40.090(d) (Special Provisions) of Chapter 8.40 of the City Municipal Code limits construction activities to between the hours of 7:00 A.M. and 8:00 P.M. Monday through Saturday, and also prohibits construction activities on Sundays and public holidays. Because

compliance with this construction time limit is required by the City Municipal Code, the proposed project and all other cumulative development would be exempt, and the cumulative impact associated with construction noise in the Huntington Beach area would be considered less than significant. Similarly, because construction-related noise generated under the proposed project would be exempt from established noise standards, the construction of the proposed project would not be cumulatively considerable and the cumulative impact of the project would also be ***less than significant***.

Other development projects within the City of Huntington Beach could potentially introduce residential development into areas that currently exceed the exterior/interior standards for residential uses. However, such residential development would have to be constructed so that the noise levels in interior/exterior living spaces do not exceed the standards as set forth in the Noise Element of the General Plan and City Municipal Code. Since any potential new residential development within the City would be required to mitigate through site and building design, insulation, and other noise preventative measures, the proposed project's impact would not be cumulatively considerable and the cumulative impact of the project would also be ***less than significant***.

As also discussed under Impact 4.9-1, rooftop HVAC equipment would be shielded, as required by MM4.9-4; therefore, no source would generate noise levels in exceedance of City standards. Consequently, multiple units would have to be located within 50 feet of a receptor to achieve noise levels that would exceed the City standards. The development types anticipated and allowed under the Specific Plan and other nearby projects are not so dense that multiple stationary units would need to be so closely spaced, either on or off site. Consequently, the cumulative effect of multiple HVAC units and other mechanical equipment would be less than significant and the contribution of the project would not be cumulatively considerable. This would be a ***less-than-significant*** impact.

As discussed in Impact 4.9-2, the proposed project's construction would produce temporary vibration impacts. However, as discussed in Impact 4.9-2, the construction vibration impact would be significant and unavoidable. Cumulative development in the City of Huntington Beach is not considered likely to result in the exposure of on-site or off-site receptors to excessive groundborne noise and vibration due to the localized nature of vibration impacts, the fact that all construction would not occur at the same time and at the same location, and the largely built-out nature of the City, which would usually preclude the use of heavy equipment such as scrapers. Therefore, only receptors located in close proximity to each construction site would be potentially affected by each activity. Construction activities associated with these projects, which are adjacent to or within, the Specific Plan, may overlap with construction activities for the proposed project for some amount of time. However, for the combined vibration impact from the simultaneous construction projects to reach cumulatively significant levels, intense construction from both projects would have to occur simultaneously within 50 feet of any receptor. As individual development projects under the Specific Plan may be constructed concurrently with each other or other related projects, it is possible that intense construction from two or more projects would simultaneously occur at distances of 50 feet or less from existing nearby receptors. Therefore, vibration from future development could potentially combine to result in a potentially significant cumulative impact. Mitigation measures MM4.9-1 through MM4.9-3 would help reduce this impact, but not to a less-than-significant level. Therefore, the cumulative impact of the proposed project would be ***significant and unavoidable***.

Groundborne vibration could conceivably be generated by operation of the proposed project and related projects in the vicinity of the Specific Plan. Since no substantial sources of groundborne vibration would be built as part of the proposed project, no vibration impacts, attributable to the proposed project, would likely occur during operation of the proposed project. It is reasonable to assume that other projects in the vicinity of the Specific Plan would have similar characteristics. Consequently, the proposed project would not be considered cumulatively considerable with respect to operational groundborne noise and vibration impacts at any on-site or off-site receptor. This impact would be ***less than significant***.

Periodic and temporary noise levels would be generated by construction of the proposed project along with other construction in the vicinity. As discussed in Impact 4.9-1, the proposed project by itself would expose some receptors to noise levels in excess of acceptable City standards. Construction noise impacts are localized in nature and decrease substantially with distance. As discussed previously, related projects provided in Table 3-2 in Chapter 3 (Project Description) are in the vicinity of the proposed project. Construction activity associated with these projects may overlap with construction activity for the proposed project. Thus, the possibility exists that a substantial cumulative increase in construction noise levels could result from construction associated with the proposed project and related projects. The cumulative impact of the proposed project and the related projects, concurrently emitting high levels of construction noise, would likely be significant and unavoidable. As discussed previously, the City exempts construction noise from the provisions of the Municipal Code as long as construction occurs within certain hours of the day. All of the projects analyzed in the cumulative context that would be constructed concurrently with the proposed project would be required to comply with the same provisions of the Municipal Code described above. Consequently, all projects analyzed in the cumulative context would fall under the Municipal Code exemption, and the cumulative impact of the proposed project would be ***less than significant***.

Operation of the proposed project would not include special events or temporary activities that would cause an increase in ambient noise levels. Therefore, there would be no temporary or periodic noise impacts to on- or off-site receptors due to operation of the proposed project, and the cumulative impact of the proposed project would be ***less than significant***.

Substantial permanent increases in noise would occur primarily as a result of increased traffic on local roadways due to the proposed project, related projects, and ambient growth through Year 2030 within the study area. Cumulative traffic-generated noise impacts have been assessed based on the contribution of the proposed project to the future cumulative base traffic volumes in the project vicinity. As shown in Table 4.9-11 (Current and Future (2030) Roadway Noise Levels), cumulative traffic would not result in substantial increases in noise along any roadway segments compared to 2030 without Project Conditions. 2030 without Project Conditions would not increase roadway noise levels above the 3.0 dBA significance threshold. Further, the proposed project contribution to future roadway noise levels would result in a decrease in noise levels compared to future year conditions without the Specific Plan, due, in part, to trip capture and trip reduction attributable to mixed-use development. Therefore, the proposed project would not be considered cumulatively considerable, and the cumulative impact would be ***less than significant***.

Table 4.9-11 Current and Future (2030) Roadway Noise Levels On and Off Site

Roadway Segment		Noise Levels in dBA L_{dn}						
		Existing	Year 2030 Without Project Traffic	Year 2030 Increase Without Project	Year 2030 With Project Traffic	Project Related Increase	Significance Threshold[1]	Exceeds Significance Threshold?
Beach Boulevard	Hazard Ave and Bolsa Ave	71.4	72.1	0.7	72.0	-0.1	3.0	No
	Bolsa Ave and McFadden Ave	71.8	72.4	0.6	72.3	-0.1	3.0	No
	McFadden Ave and I-405	72.5	73.0	0.5	73.0	0.0	3.0	No
	I-405 and Edinger Ave	71.8	72.9	1.1	72.7	-0.2	3.0	No
	Edinger Ave and Heil Ave	71.4	72.4	1.0	72.2	-0.2	3.0	No
	Heil Ave and Warner Ave	71.3	71.8	0.5	71.6	-0.2	3.0	No
	Warner Ave and Slater Ave	71.1	71.6	0.5	71.5	-0.1	3.0	No
	Slater Ave and Talbert Ave	71.1	71.4	0.3	71.3	-0.1	3.0	No
	Talbert Ave and Ellis Ave	70.5	71.5	1.0	71.4	-0.1	3.0	No
	Ellis Ave and Garfield Ave	70.6	71.6	1.0	71.4	-0.2	3.0	No
	Garfield Ave and Yorktown Ave	70.7	71.0	0.3	70.9	-0.1	3.0	No
	Yorktown Ave and Adams Ave	69.0	70.8	1.8	70.8	0.0	3.0	No
	Adams Ave and Indianapolis Ave	67.6	69.4	1.8	69.3	-0.1	3.0	No
	Indianapolis Ave and Atlanta Ave	66.9	68.3	1.4	68.2	-0.1	3.0	No
McFadden Avenue	Gothard St and Beach Blvd	65.5	65.9	0.4	65.7	-0.2	3.0	No
Edinger Avenue	Goldenwest St and Gothard St	69.0	69.5	0.5	69.3	-0.2	3.0	No
	Gothard St and Beach Blvd	69.1	71.3	2.2	71.0	-0.3	3.0	No
Warner Avenue	Gothard St and Beach Blvd	70.3	70.5	0.2	70.4	-0.1	3.0	No
	Beach Blvd and Newland St	70.2	70.8	0.6	70.7	-0.1	3.0	No
	Newland St and Magnolia St	70.3	71.0	0.7	70.9	-0.1	3.0	No
Ellis Avenue	Beach Blvd and Newland St	65.1	66.2	1.1	66.2	0.0	3.0	No
	Newland St and Magnolia St	64.6	65.8	1.2	65.6	-0.2	3.0	No
Garfield Avenue	Beach Blvd and Newland St	64.9	66.0	1.1	65.6	-0.4	3.0	No
Adams Avenue	Talbert Ave and Ellis Ave	68.5	69.9	1.4	69.7	-0.2	3.0	No
Talbert Avenue	Beach Blvd and Newland St	65.1	65.8	0.7	65.8	0.0	3.0	No

SOURCE: PBS&J 2009 (calculation data and results are provided in Appendix E).

4.9.5 References

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